UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 28 2011

Lt. Colonel Jason A. Kirk
District Engineer
Attn: Mr. Stephen Brumagin
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, South Carolina 29403-5107

Re: I-73 SAC 2008-1333-DIS

Dear Lt. Colonel Kirk:

This letter is in response to your request for comments on the above referenced joint public notice (JPN). The South Carolina Department of Transportation (Applicant) seeks a permit to perform mechanized land clearing, excavation, and the discharge of fill material, in waters of the U.S. to construct a new four lane limited access highway as part of the proposed I-73 interstate system approximately 80 miles in length located in Marlboro, Dillon, Marion, and Horry Counties, South Carolina. The project will permanently impact a total of 293.4 acres of wetlands and 4,643 linear feet of stream.

The Environmental Protection Agency (EPA), Region 4 has reviewed the JPN, and supporting information supplied by the applicant dated January 4, 2011. Based on that review EPA has found that the project does not comply with Section 404(b)(1) Guidelines, as a result we recommend that the permit for the project, as currently proposed, be denied.

Alternative Analysis

The applicant's preferred alternative is to construct a new four lane interstate roadway approximately 80 miles in length in Marlboro, Dillon, Marion, and Horry Counties, South Carolina. The applicant's preferred route runs parallel to SC 38/ US 501, a current four lane route. A high percentage of the preferred alternative is new road and intuitively may cause greater impacts and fragmentation than utilizing an existing road corridor, including the SC 38/US 501. After looking at aerial photos of the existing four lane SC 38/US 501 route, it appears that a large portion of the wetlands previously identified in National Wetland Inventory (NWI) maps, which the applicant based the decision to eliminate this existing route from analysis during the National Environmental Policy Act (NEPA) process, are now agricultural fields and pine plantations and are likely degraded, drained or filled. As an alternative to the applicant's preferred route, the use of the existing SC 38/US 501 road corridor would remove the need for a new crossing of Aquatic Resources of National Importance (ARNI) including the State Heritage Preserve wetlands and streams and the Lake Swamp area. The most current aerial photography also shows construction of upgrades at the intersection of SC 38 and US 501 and the intersection of US 301 and US 501. Continued up-grades such as these could provide a less costly expressway with fewer impacts than the preferred alternative.

EPA highly recommends the consideration of this existing SC 38/US 501 route, along with phased up-grades, as the preferred alternative for the I-73 corridor, as it is an existing four lane highway with up-grade potential, and transects already degraded waters of the U.S. This recommendation is proposed as a lower impact alternative to the applicant's preferred alternative corridor. In a recent third party study dated March 11, 2011, provided to EPA and paid for by the Southern Environmental Law Center, the transportation analyst concluded that the existing SC 38/US 501 route, with up-grades, would be the least impacting and costly route of all that were evaluated.

The study also suggests two additional options, including a route following the SC 9 corridor, or a route that would include a new connector from US 74 to SC Route 22, as opposed to the applicant's preferred alternative. The US 501 and SC Route 9 corridors were both examined early in the NEPA process, by evaluating very wide corridors which resulted in estimates of large impacts. For this reason, they were both eliminated from further consideration. EPA, however, recommends a re-examination of these options using the more narrow corridor width that was later used to evaluate the applicant's preferred alternative, to allow for an equivalent comparison with the existing SC 38/US 501 corridor. We also recommend using aerial photography or more recent wetland inventories to determine the accuracy of the estimated impacts from the use of the NWI mapping layers that do not reflect current conditions in this case.

Preferred Alternative Impacts

The applicant states that, using the Charleston District Standard Operating Procedures (SOP) to calculate impacts, 18,220 stream credits and 4,163 wetland credits are required to compensate for the proposed impacts to waters of the U.S. These credits were calculated using the September 2002 SOP, however, the October 2010 SOP was issued before the application was submitted and should therefore be used to calculate the appropriate credits needed. It appears that the project will impact State Heritage Preserve properties along with areas in Lake Swamp, all of which the EPA considers ARNIs. Impacts to these areas need to be discussed in detail including the avoidance and minimization utilized. All streams being impacted were categorized as impaired and given the lowest existing condition score possible. For the purposes of the SOP, a stream is defined as impaired based on these various stream conditions: the reach has been channelized or the entrenchment ratio and/or width/depth ratio at bankfull discharge is inappropriate for the stream type relative to the unimpaired stream condition; based on the reference reach data, the stream has degraded to a less desirable type; stream recovery is unlikely to occur naturally; the stream has extensive human-induced sedimentation; the stream has little or no riparian buffer with deep-rooted vegetation; and/or the stream has culverts, pipes, impoundments, or other in-stream manmade structures occur within 0.1 mile upstream or downstream. A large majority of the wetland impact sites were categorized as very impaired or impaired, and none were listed as fully functional. The definition of a very impaired wetland according to the SOP is: a site where many functions, typically attributed to the system type, have been lost due to site disturbances and where full functional recovery would require a major restoration effort. Therefore, in keeping with the SOP, the applicant needs to provide comprehensive information detailing the current stream and wetland conditions that would allow the impacted areas to meet these definitions of impairment.

Mitigation

The applicant proposes to mitigate wetland and stream impacts for this project through buying credits from the Sandy Island Mitigation Bank and restoring two permittee-responsible mitigation sites. This mitigation plan is not consistent with the 2008 Mitigation regulations which require applicants to look sequentially at mitigation banks, in-lieu fee programs, and permittee-responsible mitigation for required compensatory mitigation. It appears that credits from other banks are available for the impacted HUCs and these should be exhausted before permittee-responsible mitigation is considered.

The applicant's watershed description and site selection rationale for the wetland mitigation site is missing some important details. A good example of what is required in a watershed approach is given in the guidance from the U.S. Army Corps of Engineers, Kansas City District entitled, *Compensatory Mitigation Plan Requirements for Permittee Responsible Mitigation Projects*, January 2010. This guidance states:

A. The most preferred permittee responsible compensatory mitigation plan incorporates a watershed approach to ensure that the proposed compensatory mitigation site and aquatic resource restoration plan supports the sustainability and/or the improvement of aquatic resources within the identified watershed. A landscape perspective is used to identify the types of aquatic resources that most benefit the affected watershed and how the proposed mitigation site is suited to the restoration of these aquatic resources.

B. In order to meet the watershed approach criterion, the permittee must define the identified watershed boundary and address how the mitigation proposal will benefit wetland and/or stream habitats, water quality, hydrologic conditions, and aquatic and/or terrestrial species needs within the identified watershed boundary.

> *1. The permittee must identify and briefly discuss the historic losses and the current trends of losses of aquatic resources (i.e. wetland and streams) and other wildlife habitats within the watershed based on current and historic land use.*
>
> *2. Identify and briefly discuss water quality issues present within the watershed.*
>
> *3. Describe the immediate and the long-term needs of the watershed to improve both the wildlife habitats and the water quality and describe the suitability (technical feasibility) of the site to meet the needs of the watershed.*
>
> *4. Describe the historic and the current state of the mitigation site and the adjacent lands. In addition, describe the ecological suitability (physical, chemical and biological characteristics) of the site to achieve the objectives of the mitigation plan and to improve the conditions within the identified watershed.*
>
> *5. Identify and discuss the short-term and the long-term off-site threats (including water rights) within the watershed that may affect the wetland and the water quality services constructed at the mitigation site. Discuss how these threats are addressed in order to assure longevity of services at the site.*

The applicant's project goals for the wetland mitigation project include improving ground water quality, sediment reduction, and nutrient dilution. However, it appears that only vegetation

density and hydroperiod will be monitored. To determine the success toward meeting these goals, baseline data and success criteria should be established. The applicant plans to restore four types of wetlands: pine flatwoods, pine wet flatwoods, bottomland hardwoods, and bay forest. These communities have different vegetation types and densities but the only success criteria mentioned is 320 stems per acre at 3 year monitoring and 260 stems per acre at the 5 year monitoring. These criteria are inadequate in determining if the desired communities are established. Typical species composition and densities should be established for each wetland type and used as success criteria. Further, while the density at years 3 and 5 are given, no planting density is established. The measure of success for 260 stems per acre is very different depending on if the initial planting was 1,000 stems per acre versus 500 stems per acre. Also, the applicant uses the highest net improvement factor for all restoration, but the fully functional restoration of bottomland hardwood forests, bay forests, or pine flatwoods cannot be determined in a 5 year monitoring period. The applicant should either lower this net improvement score accordingly or extend the monitoring period.

The applicant's stream mitigation plan provides inadequate information to determine if the plan can be successful. The applicant needs to provide information for the existing stream including the drainage area, stream type, bankfull area and width, width to depth ratio, width floodprone area, entrenchment ratio, maximum depth at bankfull width, valley slope, bed material, etc. A reference reach should also be chosen and have the same factors measured. The applicant must then determine the expected measurements of these factors for the design reach and how they will be achieved including map plans showing the in-stream structures (cross vanes, j hooks, etc) and their placement. Nearly 59 percent of the stream restoration will be classified as Rosgen DA stream with the remainder being Class C. Information indicating that the natural stream channel followed this pattern (i.e. slope equals less than 0.5 percent for the areas Rosgen DA streams are restored) and a similar reference reach should be provided. The applicant needs to provide information to show that impacted streams are also Rosgen DA and Class C streams and that this mitigation is in-kind. The applicant needs to better describe the prescription to create the Rosgen DA streams, the success criteria to be used, and adaptive management in case the area does not form an anastamosed channel system, essentially becoming a wetland area.

In order to have fully evaluated the proposed impacts and mitigation, EPA believes that site visits would have been useful before the comment period was over. EPA would like to take part in any visits that may be scheduled in the future.

Based on the above observations, EPA has determined that the project, as currently proposed, does not comply with the Section 404(b)(1) Guidelines and may have substantial and unacceptable adverse impacts on ARNIs. Therefore, we recommend denial of the project, as currently proposed. This letter follows the field-level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(a) regarding Section 404(q) of the Clean Water Act.

Thank you for the opportunity to review and comment on this JPN. If you have any questions regarding these comments, please contact Ms. Kelly Laycock, ORISE Intern, (Laycock.Kelly@epa.gov or 404-562-9132) or Ms. Jennifer Derby, Section Chief (derby.jennifer@epa.gov or 404-562-9401).

Sincerely,

James D. Giattina
Director
Water Protection Division

cc: Mr. Stephen Brumagin, USACE
Mr. Travis Hughes, USACE
Mr. Mark Leao, USFWS
Ms. Pace Wilber, NMFS
Ms. Susan Davis, SC DNR
Ms. Vivianne Vejdani, SC DNR
Mr. Mark Giffin, SC DHEC
Mr. Chuck Hightower, SC DHEC